# Assignment no.1

## Cover Letter & Resume

**Cover Letter**

Aarav Mehta

Flat 12B, Sunrise Apartments, Tilak Nagar, Mumbai, Maharashtra 400089 Email: [aarav.mehta@email.com](mailto:aarav.mehta@email.com)

Phone: 9876543210

Date: 04-10-2024

Hiring Manager Infosys Limited

Infosys Campus, Electronics City, Bengaluru, Karnataka 560100 Subject: Application for Software Engineer Position

Dear Hiring Manager,

I am writing to express my interest in the Software Engineer position at Infosys Limited. With my strong interest in technology and problem-solving, I am eager to contribute my skills to your team and learn from industry professionals.

I am currently pursuing a Bachelor’s degree in Information Technology. I have gained experience in programming languages such as Python, Java, and C++, along with web development basics in HTML, CSS, and JavaScript. Through academic projects, I have built a foundation in software development and databases.

In addition to academics, I have participated in coding competitions and group projects, which improved my teamwork and problem-solving abilities. I am enthusiastic about applying these skills in a professional environment and contributing to Infosys’ innovative projects.

I look forward to the opportunity to discuss how I can add value to your team. Thank you for your time and consideration.

Sincerely, Aarav Mehta

**Resume**

AARAV MEHTA

Flat 12B, Sunrise Apartments, Tilak Nagar, Mumbai, Maharashtra 400089 Phone: +91 9876543210 | Email: [aarav.mehta@email.com](mailto:aarav.mehta@email.com)

LinkedIn: linkedin.com/in/aarav-mehta

Objective

Motivated IT undergraduate with strong skills in programming and web development. Seeking to apply technical knowledge in software development and grow in a challenging work environment.

Core Skills

Languages: Python, Java, C++, HTML, CSS, JavaScript Frameworks: Bootstrap, Tailwind CSS

Databases: MySQL, SQLite Tools: Git, GitHub, VS Code

Other: Basic knowledge of Cybersecurity

Certifications

* Responsive Web Design – freeCodeCamp (2023)
* Introduction to Cyber Security – Coursera (2023)
* JavaScript Algorithms and Data Structures – freeCodeCamp (Expected 2024)

Projects

* Personal Portfolio Website: Built a responsive website with HTML, CSS, and

Bootstrap to showcase projects.

* Library Management System: Developed a small project in Python with MySQL

integration for record-keeping.

# Assignment no.2

## Short Proposal

Proposal for Implementation of Artificial Intelligence (AI) in Education Executive Summary:

This proposal suggests using Artificial Intelligence (AI) tools in education to personalize learning, improve efficiency, and enhance student engagement.

Introduction:

AI is transforming industries, including education. AI-powered platforms can analyze student performance, recommend personalized learning paths, and automate administrative tasks.

Objectives:

1. Improve learning outcomes by 25%
2. Automate routine administrative tasks
3. Increase student engagement and satisfaction

Methodology:

1. Conduct a needs assessment in schools/colleges
2. Develop AI-powered learning tools
3. Integrate AI with existing Learning Management Systems (LMS)
4. Train teachers to effectively use AI tools

Expected Outcomes:

* + Improved student performance
  + Reduced workload for teachers
  + Higher satisfaction among learners

Timeline:

* + Months 1–2: Needs assessment
  + Months 3–5: Tool development
  + Months 6–8: Integration and training
  + Month 9: Evaluation and rollout

Budget: ₹60,000

* + Software: ₹20,000
  + Training: ₹15,000
  + Hardware: ₹15,000
  + Personnel: ₹5,000
  + Contingency: ₹5,000

Conclusion:

Implementing AI in education will enhance learning, reduce costs, and improve efficiency. This project has the potential to transform the educational sector.

# Assignment no.3

## Meeting Documentation

#### Notice of Meeting NOTICE OF MEETING

All members of the IT Student Association are hereby informed that a meeting will be held as per the details below:

* + **Date:** 10th October 2024
  + **Time:** 11:00 AM
  + **Venue:** Seminar Hall, Department of Information Technology
  + **Purpose:** Discussion on organizing a Tech Fest in the upcoming semester All members are requested to attend the meeting on time.

#### By Order

Secretary,

IT Student Association

#### Agenda of Meeting AGENDA OF THE MEETING

**Meeting Date:** 10th October 2024

**Time:** 11:00 AM

**Venue:** Seminar Hall, Department of Information Technology

#### Agenda Items:

* 1. Welcome and introduction by the Chairperson
  2. Discussion on dates and theme of Tech Fest
  3. Allocation of responsibilities (event heads, publicity, sponsorships, logistics)
  4. Budget planning and approval process
  5. Any other points with permission of the Chair
  6. Vote of thanks

#### Prepared by:

Secretary, IT Student Association

#### Minutes of Meeting MINUTES OF THE MEETING

**Meeting Details:**

* **Date:** 10th October 2024
* **Time:** 11:00 AM
* **Venue:** Seminar Hall, Department of IT
* **Chairperson:** Prof. A. Sharma
* **Secretary:** Student Secretary (ITSA)

**Members Present:** 25 (including faculty coordinator and student members)

#### Members Absent: 3

**Discussion Points and Decisions:**

* 1. The Chairperson welcomed all members and explained the purpose of the meeting.
  2. It was decided that the Tech Fest will be held on **15th and 16th December 2024**.
  3. The theme of the event will be **"Innovations in Technology."**
  4. Responsibilities were assigned:
     + Event Heads: 2 senior students
     + Publicity: Media team
     + Sponsorships: Finance team
     + Logistics: Volunteer group
  5. A tentative budget of **₹40,000** was approved. A detailed budget will be presented in the next meeting.
  6. No additional points were raised.

**Conclusion:** The meeting ended with a vote of thanks by the Secretary at 12:15 PM.

#### Recorded by:

Student Secretary, IT Student Association

# Assignment no.4

## Technical Paper

### ONLINE FOOD ORDERING SYSTEM ABSTRACT

The Online Food Ordering System has become an essential platform in today’s digital era, simplifying how customers order food from restaurants. This paper presents the design and implementation of a web-based system that allows users to browse menus, place orders, and make payments online. The proposed system integrates front-end design, database management, and payment gateways to provide a seamless user experience. Experimental results demonstrate fast processing time, user-friendly navigation, and high customer satisfaction, making the system suitable for restaurants, cafés, and food delivery businesses.

### INTRODUCTION

#### Background

With the rapid growth of the internet and smartphones, online food ordering platforms have become popular worldwide. These systems allow restaurants to expand their customer base and provide convenient food delivery services.

Applications include:

* Restaurant order management
* Online payments and digital receipts
* Customer feedback collection
* Home delivery tracking

#### Motivation

Existing online ordering systems sometimes face challenges related to scalability, payment security, and user interface complexity. The motivation behind this project is to design a simple, secure, and efficient system capable of:

* Handling multiple orders at the same time
* Providing secure transactions
* Offering a smooth and user-friendly interface

#### Research Objectives

This research aims to:

1. Design and implement a web-based food ordering system with database integration
2. Evaluate system performance in terms of usability, speed, and security
3. Explore the use of mobile-friendly interfaces for better customer reach

#### Scope

The project focuses on developing a functional prototype with the following features:

* + Menu browsing and item selection
  + Cart and checkout process
  + Online payment integration
  + Order history and customer profile management

#### Organization

The paper is structured as follows:

* + Section 2: Literature Review
  + Section 3: System Architecture
  + Section 4: Front-End and Back-End Development
  + Section 5: Payment Gateway and Database Integration
  + Section 6: Performance Evaluation
  + Section 7: Conclusion and Future Work

### STRENGTHS & ANALYSIS

1. Easy-to-use interface
2. Fast processing time for orders
3. Secure online payments
4. Real-time order tracking
5. High scalability for multiple restaurants

### WEAKNESSES

1. Dependence on stable internet connection
2. Security risks in online payments if not implemented properly
3. Limited features for small restaurants without technical support
4. Lack of offline access
5. Requires frequent updates for smooth functioning

### FUTURE WORK

1. Improve security using advanced encryption methods
2. Add AI-based recommendation systems for personalized orders
3. Include multi-language support for wider accessibility
4. Develop a mobile app version with push notifications
5. Integrate delivery partner tracking systems

### TECHNICAL MERITS

1. Effective use of web technologies (HTML, CSS, PHP, JavaScript, MySQL)
2. Secure database design and payment gateway integration
3. Scalable system architecture

### RESEARCH CONTRIBUTION

1. Development of a practical and functional online food ordering website
2. Analysis of system performance under different user loads
3. Demonstration of secure transactions and order tracking

### IMPACT

1. Improves convenience for customers
2. Expands customer reach for restaurants
3. Supports the growth of digital food delivery services
4. Contributes to the development of e-commerce in the food industry

### ANALYSIS CRITERIA

1. Originality (7/10)
2. Technical Merit (8/10)
3. Significance (8/10)
4. Impact (9/10)
5. Clarity (9/10)

### RECOMMENDATION

1. Focus on improving security features
2. Add advanced features like AI recommendations and chatbot support
3. Conduct comparative analysis with popular platforms like Swiggy and Zomato
4. Explore integration with mobile apps for better accessibility

# Assignment no.5

## Statement of Purpose (SOP)

### STATEMENT OF PURPOSE

I am a final-year student of Computer Science at the National Institute of Technology. Over the course of my studies, I have developed a strong interest in technology and problem-solving, which has motivated me to apply for the Master’s program in Data Science at Stanford University. My goal is to use data-driven methods to create practical solutions that can support decision-making and bring improvements to different fields.

### ACADEMIC BACKGROUND

During my undergraduate studies, I built a foundation in subjects such as Statistics, Algorithms, and Database Management. Courses like Data Mining and Machine Learning helped me gain skills in handling complex data and drawing meaningful conclusions.

One of my key projects was creating a recommendation system for an e-commerce platform, which gave me practical experience in analyzing user behavior. I have also worked with programming languages like Python and R, using them for projects that focused on data analysis and visualization. These experiences strengthened my technical knowledge and problem-solving abilities.

### CAREER GOALS

My short-term goal is to enhance my expertise in Data Science through the Master’s program at Stanford. In the long term, I aspire to work as a data scientist, applying advanced analytical tools to address challenges in fields like healthcare, finance, and urban development. I am particularly interested in how data can be used to bring social impact and improve quality of life.

### CONCLUSION

With my academic background, technical skills, and clear interest in Data Science, I believe that the Master’s program at Stanford University will provide the right environment for me to achieve my career goals. I look forward to contributing to and learning from the university’s diverse academic community.

#### Sincerely,

Student Name

# Assignment no.6

## Intellectual Property Rights (IPR)

#### Cases for Seven Types of Intellectual Property Rights (IPR)

1. **Copyright Case: Campbell v. Acuff-Rose Music, Inc. (1994)**
   * **Parties Involved:** Rap group *2 Live Crew* and *Acuff-Rose Music*, which owned

the copyright to Roy Orbison’s song *“Oh, Pretty Woman.”*

* + **Issue:** 2 Live Crew made a parody version of the song without permission. Acuff-Rose sued for copyright infringement.
  + **Outcome:** The U.S. Supreme Court ruled that parody can be considered *fair use* under copyright law, setting an important precedent.

#### Trademark Case: Qualitex Co. v. Jacobson Products Co. (1995)

* + **Parties Involved:** *Qualitex Company*, which used a unique green-gold color for dry-cleaning press pads, and *Jacobson Products*, which used a similar color.
  + **Issue:** Qualitex argued that the color was part of its trademark identity. Jacobson disputed this.
  + **Outcome:** The U.S. Supreme Court ruled that a color can be trademarked if it has acquired distinctiveness and identifies the source of the product.

#### Patent Case: eBay Inc. v. MercExchange, L.L.C. (2006)

* + **Parties Involved:** *eBay*, an online marketplace, and *MercExchange*, which held patents related to online auction technology.
  + **Issue:** MercExchange accused eBay of patent infringement and sought an injunction.
  + **Outcome:** The Supreme Court ruled that courts must consider several factors before granting an injunction in patent cases. This case shaped how remedies are applied in patent disputes.

#### Industrial Design Case: Apple Inc. v. Samsung Electronics Co. (2012)

* + **Parties Involved:** *Apple Inc.* and *Samsung Electronics.*
  + **Issue:** Apple accused Samsung of copying the design of the iPhone, including its rounded corners, icons, and user interface.
  + **Outcome:** Apple was initially awarded significant damages. The case highlighted the importance of protecting product designs as industrial designs.

#### Geographical Indication Case: Darjeeling Tea (India)

* + **Parties Involved:** *Tea Board of India* vs. various international companies.
  + **Issue:** The Tea Board of India sought to protect “Darjeeling Tea” as a geographical indication (GI), ensuring that only tea grown in the Darjeeling region could use that name.
  + **Outcome:** India successfully registered Darjeeling Tea as a GI, protecting its authenticity in both domestic and international markets.

#### Trade Secret Case: DuPont v. Christopher (1970)

* + **Parties Involved:** *DuPont Company* and *Christopher (a competitor).*
  + **Issue:** Christopher hired a pilot to fly over DuPont’s plant under construction

to photograph trade secrets about its chemical process.

* + **Outcome:** The court ruled in favor of DuPont, stating that even without trespassing, improper means of obtaining trade secrets is unlawful.

#### Plant Variety Protection Case: Pioneer Hi-Bred International v. J.E.M. Ag Supply (2001)

* + **Parties Involved:** *Pioneer Hi-Bred International* (seed company) and *J.E.M. Ag Supply* (seed distributor).
  + **Issue:** J.E.M. Ag Supply argued that plant varieties should not receive patent protection.
  + **Outcome:** The Supreme Court held that new plant varieties can be patented,

strengthening plant breeders’ rights under intellectual property law.

# Assignment no.7

## Interpersonal Skills

### INTERPERSONAL SKILLS

#### Emotional Intelligence (EI) Case

Emotional Intelligence (EI) is the ability to recognize, understand, and manage one’s own emotions as well as the emotions of others. Introduced by Peter Salovey and John D. Mayer (1990), EI plays a vital role in building relationships, decision- making, and stress management.

**Example:** Oprah Winfrey’s empathetic interviewing style shows high EI, as she listens actively, understands emotions, and connects with people. By developing EI, individuals can improve leadership, teamwork, and personal growth.

#### Leadership and Motivation Case

Leadership inspires and guides teams toward common goals. John Maxwell (1993) emphasized that good leaders communicate clearly, empower others, and lead by example. Motivation, on the other hand, drives people to achieve goals and boosts productivity.

**Example of Leadership:** Nelson Mandela’s unifying leadership in post-apartheid South Africa shows the power of vision and integrity.

**Example of Motivation:** Google’s “20% time policy,” where employees spend part

of their time on passion projects, illustrates how motivation can spark innovation.

#### Conflict Management and Negotiation Case

Conflict management resolves disputes in a constructive way, while negotiation aims for agreements that benefit all parties. William Ury (1981) highlighted listening, mutual respect, and problem-solving as key strategies.

**Example of Conflict Management:** The 2007–2008 Writers Guild strike was resolved through mediation, showing how structured dialogue can settle disputes.

**Example of Negotiation:** The Camp David Accords (1978) between Egypt and Israel highlight successful negotiation that achieved lasting peace agreements.

#### Time Management Case

Time management helps balance tasks, reduce stress, and increase efficiency. Stephen Covey’s *7 Habits of Highly Effective People* (1989) focus on prioritizing important tasks.

**Example:** Elon Musk is known for scheduling his day into 5-minute blocks, maximizing productivity. By managing time effectively, individuals achieve work-life balance and meet goals efficiently.

#### Assertiveness Case

Assertiveness is expressing thoughts and needs confidently without disrespecting others. Manuel J. Smith (1975) described assertiveness as a balance between passivity and aggression.

**Example:** Malala Yousafzai’s advocacy for girls’ education shows assertiveness, as she stood up for her beliefs despite facing opposition. Being assertive helps in building self-confidence and respectful communication.

#### Decision-Making Case

Decision-making involves analyzing options and choosing the best course of action. Herbert A. Simon (1957) stressed the importance of setting goals and evaluating alternatives.

**Example:** Warren Buffett’s value investing strategy shows effective decision- making by carefully analyzing data before making financial choices. Strong decision- making skills lead to better outcomes in personal and professional life.

# Assignment no.8

## Aptitude Test (Verbal Ability)

#### Aptitude Test (Verbal Ability & IPR Awareness)

1. **Which of the following is covered under IPR?**
   1. Patents
   2. Copyrights
   3. All of these
   4. Trademarks

#### Answer: (c) All of these

1. **What is a patent?**
   1. Exclusive rights granted to an inventor to protect their invention
   2. Permission to manufacture and sell a product without restrictions
   3. A contract between two parties for the use of intellectual property
   4. A government subsidy for research and development projects

#### Answer: (a) Exclusive rights granted to an inventor

1. **On a school computer, Jamie learned how to copy programs. A classmate asked her to copy a program for his home use. Her most ethical response would be:**
   1. I'll copy it, but you have to promise not to tell anyone.
   2. I don't know how to copy disks.
   3. I can't copy it because it would break copyright laws.
   4. I'll copy it for you, but you can't copy it for anyone else.

#### Answer: (c) I can't copy it because it would break copyright laws

1. **Can a lecture delivered by an academician be reported in a newspaper?**
   1. Yes
   2. No
   3. Yes, with permission

#### Answer: (c) Yes, with permission

1. **Which of the following is not an infringement of copyright?**
   1. Copying software to another computer by an educational institution
   2. Copying software to another computer by a company
   3. Copying software to another computer
   4. Making backup copies

#### Answer: (d) Making backup copies

1. **Patents can be granted for:**
   1. Process
   2. Ideas
   3. Both product and process
   4. Product

#### Answer: (c) Both product and process

1. **The government may order the non-advertisement of any patent application in case of inventions related to:**
   1. Information technology
   2. Food
   3. Drugs
   4. Defence technology

#### Answer: (d) Defence technology

1. **If the owner of a copyrighted work refuses to republish, the copyright board may grant a compulsory license.**
   1. True
   2. False

#### Answer: True

1. **Assignments can be made even in respect of work which:**
   1. Is prepared but not published
   2. Has not yet come into existence
   3. Is already published

#### Answer: (b) Has not yet come into existence

1. **The Patent Act is passed by:**
   1. State Government
   2. Central/Federal Government

#### Answer: (b) Central/Federal Government

1. **International copyright is governed by the:**
   1. Paris Convention
   2. TRIPS
   3. Berne Convention
   4. WTO

#### Answer: (c) Berne Convention

1. **Can a lecture delivered in the classroom be copyrighted?**
   1. Yes
   2. Occasionally, with conditions
   3. No

#### Answer: (a) Yes

1. **A patent for which of the following is prohibited?**
   1. Traditional knowledge
   2. Arms
   3. Atomic energy
   4. Junk food

#### Answer: (c) Atomic energy

1. **The jurisdiction of the registrar of a trademark for application purposes is decided on:**
   1. Place of residence
   2. Principal place of business
   3. As per registrar’s will
   4. As per applicant’s will

#### Answer: (b) Principal place of business

1. **What is the primary role of the USPTO (United States Patent and Trademark Office)?**
   1. Enforcing intellectual property laws
   2. Promoting international trade agreements
   3. Granting patents and registering trademarks
   4. Reviewing mergers and acquisitions

#### Answer: (c) Granting patents and registering trademarks

1. **A design can also be registered under:**
   1. Trademark Act
   2. Patent Act
   3. Geographical Indication Act
   4. Copyright Act

#### Answer: (d) Copyright Act

1. **What is the typical duration of a patent?**
   1. 5 years
   2. 15 years
   3. 20 years
   4. Lifetime

#### Answer: (c) 20 years

1. **The IPR complete specification gives:**
   1. Full description of claim only
   2. Full description of royalty
   3. Full description of invention
   4. Full description of application

#### Answer: (c) Full description of invention

1. **Use of a patented invention by a person other than the patentee constitutes:**
   1. Infringement of patent rights of patentee
   2. Anticipation
   3. Advertisement of patent
   4. Cooperation with patentee

#### Answer: (a) Infringement of patent rights of patentee

1. **The patent case *Association for Molecular Pathology v. Myriad Genetics, Inc.***

#### centered around the patentability of which naturally occurring entities?

* 1. Human genes
  2. Rocks and minerals
  3. Animal species
  4. Microorganisms

**Answer: (a) Human genes**